STATE OF NEW HAMPSHIRE
INTER-DEPARTMENT COMMUNICATION

DATE: October 31, 2019

FROM: JEL for Andrew O'Sullivan
Wetlands Program Manager

AT (OFFICE): Department of Transportation
Bureau of Environment

SUBJECT Dredge & Fill Application
Littleton, 42535

TO Craig Rennie, Inland Wetland Supervisor
New Hampshire Wetlands Bureau
29 Hazen Drive, P.O. Box 95
Concord, NH 03302-0095

Forwarded herewith is the application package prepared by NH DOT Bureau of Bridge Maintenance for the subject major impact project. This project is classified as Major per Env-Wt 303.02(p). The project is located on I-93 over Mullikin Brook in the Town of Littleton, NH. The proposed work consists of rehabilitation of bridge 133/094. The bridge currently shows deterioration of the metal plate pipe arch along the invert of the culvert. To rehabilitate the bridge, Bridge Maintenance plans to install a concrete invert lining along the entire length of the crossing to stabilize and protect the floor from failing.

This project was reviewed at the Natural Resource Agency Coordination Meeting on June 19, 2019 and April 17, 2019. A copy of the minutes has been included with this application package. A copy of this application and plans can be accessed on the Departments website via the following link: http://www.nh.gov/dot/org/projectdevelopment/environment/units/program-management/wetland-applications.htm

Mitigation is not required. A downstream fish weir is proposed to back water through the crossing to improve aquatic organism passage.

The lead people to contact for this project are Steve Johnson, Administrator, Bureau of Bridge Maintenance (271-3668 or steve.johnson@dot.nh.gov) or Andrew O'Sullivan, Wetlands Program Manager, Bureau of Environment (271-3226 or andrew.o'sullivan@dot.nh.gov).

A payment voucher has been processed for this application (Voucher #) in the amount of $1,533.60.

If and when this application meets with the approval of the Bureau, please send the permit directly to Andrew O'Sullivan, Wetlands Program Manager, Bureau of Environment.

AMO:sel
Enclosures
cc:
BOE Original
Town of Littleton (4 copies via certified mail)
David Trubey, NH Division of Historic Resources (Cultural Review Within)
Carol Henderson, NH Fish & Game (via electronic notification)
Maria Tur, US Fish & Wildlife (via electronic notification)
Mark Kern, US Environmental Protection Agency (via electronic notification)
Michael Hicks, US Army Corp of Engineers (via electronic notification)
Kevin Nyhan, BOE (via electronic notification)
Connecticut River Riverbend Local Advisory Committee (via certified mail)

S:\Global\B26-BridgeMaintenance\Wetlands\CY2018, CY2019, CY2020 Permits\Littleton 133-094 42535\WETAPP - Bridge Maintenance.doc

NHDES-W-06-012

WETLANDS PERMIT APPLICATION

Water Division/ Wetlands Bureau

Land Resources Management

Check the status of your application: www.des.nh.gov/onestop

RSA/Rule: RSA 482-A/ Env-Wt 100-900

Administrative Use Only	Administrative Use Only	Administrative Use Only	File No.:
			Check No.:
			Amount:
			Initials:

1. REVIEW TIME: Indicate your Review Time below. To determine review time, refer to Guidance Document A for instructions.

☒ Standard Review (Minimum, Minor or Major Impact) ☐ Expedited Review (Minimum Impact only)

2. MITIGATION REQUIREMENT:

If mitigation is required, a Mitigation-Pre Application meeting must occur prior to submitting this Wetlands Permit Application. To determine if mitigation is required, please refer to the Determine if Mitigation is Required Frequently Asked Questions.

Mitigation Pre-Application Meeting Date: Month: __ Day: __ Year: ____

☒ N/A - Mitigation is not required

3. PROJECT LOCATION:

Separate wetland permit applications must be submitted for each municipality within which wetland impacts occur.

ADDRESS: **I-93 over Mullikin Brook**			TOWN/CITY: **Littleton**
TAX MAP: **N/A**	BLOCK: **N/A**	LOT: **N/A**	UNIT: **N/A**
USGS TOPO MAP WATERBODY NAME: **Mullikin Brook** ☐ NA		STREAM WATERSHED SIZE: **3.1** ☐ NA	
LOCATION COORDINATES (If known): **44`18'49.71" 71`51'16.45"**		☒ Latitude/Longitude ☐ UTM ☐ State Plane	

4. PROJECT DESCRIPTION:

Provide a brief description of the project outlining the scope of work. Attach additional sheets as needed to provide a detailed explanation of your project. DO NOT reply "See Attached" in the space provided below.

This project includes the rehabilitation of the bridge (133/094) carrying I-93 over Mullikin Brook. This project will place a concrete invert lining along the entire length of the existing pipe to help stabilize the structure and protect the floor from failing

5. SHORELINE FRONTAGE:

☒ N/A This does not have shoreline frontage. SHORELINE FRONTAGE:

Shoreline Frontage is calculated by determining the average of the distances of the actual natural navigable shoreline frontage and a straight line drawn between the property lines, both of which are measured at the normal high water line (Env-Wt 101.89).

6. RELATED NHDES LAND RESOURCES MANAGEMENT PERMIT APPLICATIONS ASSOCIATED WITH THIS PROJECT:

Please indicate if any of the following permit applications are required and, if required, the status of the application.

To determine if other Land Resources Management Permits are required, refer to the Land Resources Management Webpage.

Permit Type	Permit Required	File Number	Permit Application Status
Alteration of Terrain Permit Per RSA 485-A:17	☐ YES ☒ NO	____	☐ APPROVED ☐ PENDING ☐ DENIED
Individual Sewerage Disposal per RSA 485-A:2	☐ YES ☒ NO	____	☐ APPROVED ☐ PENDING ☐ DENIED
Subdivision Approval Per RSA 485-A	☐ YES ☒ NO	____	☐ APPROVED ☐ PENDING ☐ DENIED
Shoreland Permit Per RSA 483-B	☐ YES ☒ NO	____	☐ APPROVED ☐ PENDING ☐ DENIED

7. NATURAL HERITAGE BUREAU & DESIGNATED RIVERS:

See the Instructions & Required Attachments document for instructions to complete a & b below.

a. Natural Heritage Bureau File ID: NHB **19** - **1021** .

b. ☒ This project is within a Designated River corridor. The project is within ¼ mile of: **Moore Reservoir** ; and date a copy of the application was sent to the Local River Management Advisory Committee: Month: __ Day: __ Year: ____

☐ N/A – This project is not within a Designated River corridor.

8. APPLICANT INFORMATION (Desired permit holder)

LAST NAME, FIRST NAME, M.I.: **NH Dept. of Transportation**

TRUST / COMPANY NAME: **NH Dept. of Transportation** | MAILING ADDRESS: **PO Box 483**

TOWN/CITY: **Concord** | STATE: **NH** | ZIP CODE: **03302**

EMAIL or FAX: **Steve. Johnson@dot.nh.gov** | PHONE: **271-3667**

ELECTRONIC COMMUNICATION: By initialing here: **SJ**, I hereby authorize NHDES to communicate all matters relative to this application electronically.

9. PROPERTY OWNER INFORMATION (If different than applicant)

LAST NAME, FIRST NAME, M.I.: **NH Dept. of Transportation**

TRUST / COMPANY NAME: **NH Dept. of Transportation** | MAILING ADDRESS: **PO BOX 483**

TOWN/CITY: **concord** | STATE: **NH** | ZIP CODE: **03302**

EMAIL or FAX: **Andrew.O'Sullivan@dot.nh.gov** | PHONE: **271-3226**

ELECTRONIC COMMUNICATION: By initialing here _____, I hereby authorize NHDES to communicate all matters relative to this application electronically.

10. AUTHORIZED AGENT INFORMATION

LAST NAME, FIRST NAME, M.I.: | COMPANY NAME:

MAILING ADDRESS:

TOWN/CITY: | STATE: | ZIP CODE:

EMAIL or FAX: | PHONE:

ELECTRONIC COMMUNICATION: By initialing here _____, I hereby authorize NHDES to communicate all matters relative to this application electronically.

11. PROPERTY OWNER SIGNATURE:

See the Instructions & Required Attachments document for clarification of the below statements

By signing the application, I am certifying that:

1. I authorize the applicant and/or agent indicated on this form to act in my behalf in the processing of this application, and to furnish upon request, supplemental information in support of this permit application.
2. I have reviewed and submitted information & attachments outlined in the Instructions and Required Attachment document.
3. All abutters have been identified in accordance with RSA 482-A:3, I and Env-Wt 100-900.
4. I have read and provided the required information outlined in Env-Wt 302.04 for the applicable project type.
5. I have read and understand Env-Wt 302.03 and have chosen the least impacting alternative.
6. Any structure that I am proposing to repair/replace was either previously permitted by the Wetlands Bureau or would be considered grandfathered per Env-Wt 101.47.
7. I have submitted a Request for Project Review (RPR) Form (www.nh.gov/nhdhr/review) to the NH State Historic Preservation Officer (SHPO) at the NH Division of Historical Resources to identify the presence of historical/ archeological resources while coordinating with the lead federal agency for National Historic Preservation Act (NHPA) 106 compliance.
8. I authorize NHDES and the municipal conservation commission to inspect the site of the proposed project.
9. I have reviewed the information being submitted and that to the best of my knowledge the information is true and accurate.
10. I understand that the willful submission of falsified or misrepresented information to the NHDES is a criminal act, which may result in legal action.
11. I am aware that the work I am proposing may require additional state, local or federal permits which I am responsible for obtaining.
12. The mailing addresses I have provided are up to date and appropriate for receipt of NHDES correspondence. NHDES will not forward returned

Property Owner Signature	Print name legibly	Date
Steve Johnson	STEVE W JOHNSON	10/31/2019

MUNICIPAL SIGNATURES

12. CONSERVATION COMMISSION SIGNATURE

The signature below certifies that the municipal conservation commission has reviewed this application, and:

1. Waives its right to intervene per RSA 482-A:11;
2. Believes that the application and submitted plans accurately represent the proposed project; and
3. Has no objection to permitting the proposed work.

⇨	Print name legibly	Date

DIRECTIONS FOR CONSERVATION COMMISSION

1. Expedited review ONLY requires that the conservation commission's signature is obtained in the space above.
2. Expedited review requires the Conservation Commission signature be obtained **prior** to the submittal of the original application to the Town/City Clerk for signature.
3. The Conservation Commission may refuse to sign. If the Conservation Commission does not sign this statement for any reason, the application is not eligible for expedited review and the application will be reviewed in the standard review time frame.

13. TOWN / CITY CLERK SIGNATURE

As required by Chapter 482-A:3 (amended 2014), I hereby certify that the applicant has filed four application forms, four detailed plans, and four USGS location maps with the town/city indicated below.

⇨	Print name legibly	Town/City	Date

DIRECTIONS FOR TOWN/CITY CLERK:

Per RSA 482-A:3,I

1. For applications where "Expedited Review" is checked on page 1, if the Conservation Commission signature is not present, NHDES will accept the permit application, but it will NOT receive the expedited review time.
2. IMMEDIATELY sign the original application form and four copies in the signature space provided above;
3. Return the signed original application form and attachments to the applicant so that the applicant may submit the application form and attachments to NHDES by mail or hand delivery.
4. IMMEDIATELY distribute a copy of the application with one complete set of attachments to each of the following bodies: the municipal Conservation Commission, the local governing body (Board of Selectmen or Town/City Council), and the Planning Board; and
5. Retain one copy of the application form and one complete set of attachments and make them reasonably accessible for public review.

DIRECTIONS FOR APPLICANT:

1. Submit the single, original permit application form bearing the signature of the Town/ City Clerk, additional materials, and the application fee to NHDES by mail or hand delivery.

14. IMPACT AREA:

For each jurisdictional area that will be/has been impacted, provide square feet and, if applicable, linear feet of impact.

Permanent: *impacts that will remain after the project is complete.*

Temporary: *impacts not intended to remain (and will be restored to pre-construction conditions) after the project is completed.*

Intermittent Streams: *linear footage distance of disturbance is measured along the thread of the channel.*

Perennial Streams/ Rivers: *the total linear footage distance is calculated by summing the lengths of disturbance to the channel and each bank.*

JURISDICTIONAL AREA	PERMANENT Sq. Ft. / Lin. Ft.		TEMPORARY Sq. Ft. / Lin. Ft.	
Forested wetland		☐ ATF		☐ ATF
Scrub-shrub wetland		☐ ATF		☐ ATF
Emergent wetland		☐ ATF		☐ ATF
Wet meadow		☐ ATF		☐ ATF
Intermittent stream channel	/	☐ ATF	/	☐ ATF
Perennial Stream / River channel	3035 / 292	☐ ATF	2124 / 98	☐ ATF
Lake / Pond	/	☐ ATF	/	☐ ATF
Bank - Intermittent stream	/	☐ ATF	/	☐ ATF
Bank - Perennial stream / River	/	☐ ATF	2509 / 243	☐ ATF
Bank - Lake / Pond	/	☐ ATF	/	☐ ATF
Tidal water	/	☐ ATF	/	☐ ATF
Salt marsh		☐ ATF		☐ ATF
Sand dune		☐ ATF		☐ ATF
Prime wetland		☐ ATF		☐ ATF
Prime wetland buffer		☐ ATF		☐ ATF
Undeveloped Tidal Buffer Zone (TBZ)		☐ ATF		☐ ATF
Previously-developed upland in TBZ		☐ ATF		☐ ATF
Docking - Lake / Pond		☐ ATF		☐ ATF
Docking - River		☐ ATF		☐ ATF
Docking - Tidal Water		☐ ATF		☐ ATF
Vernal Pool		☐ ATF		☐ ATF
TOTAL	3035 / 292		4633 / 341	

15. APPLICATION FEE: See the Instructions & Required Attachments document for further instruction

☐ Minimum Impact Fee: Flat fee of $ 200

☐ Minor or Major Impact Fee: Calculate using the below table below

Permanent and Temporary (non-docking)	**7668** sq. ft.	X $0.20 =	$ **1533.60**
Temporary (seasonal) docking structure:	sq. ft.	X $1.00 =	$
Permanent docking structure:	sq. ft.	X $2.00 =	$
Projects proposing shoreline structures (including docks) add $200 =			$
Total =			$ **1533.60**
The Application Fee is the above calculated Total or $200, whichever is greater =			$ **1533.60**


N
MOORE
Boat Ramp
HILLTOP
ROAD
Littleton 133/094
Brook
Mullikin
SLATE
LEDGE
ROAD
Copyright © 2013 National Geographic Society, i-cubed
0 0.1 0.2 0.4 0.6 0.8
Miles
1:24,000

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

WETLANDS PERMIT APPLICATION – ATTACHMENT A
MINOR AND MAJOR - 20 QUESTIONS

Land Resources Management
Wetlands Bureau

Check the Status of your application: www.des.nh.gov/onestop

RSA/ Rule: RSA 482-A, Env-Wt 100-900

Env-Wt 302.04 Requirements for Application Evaluation - For any major or minor project, the applicant shall demonstrate by plan and example that the following factors have been considered in the project's design in assessing the impact of the proposed project to areas and environments under the department's jurisdiction. Respond with statements demonstrating:
1. The need for the proposed impact.
The existing metal arch pipe was built in 1984 and shows signs of deterioration. The current condition of the pipe shows substantial rust and holes. The impacts for this project include access to the structure as well as the proposed concrete invert through the structure and a downstream fish weir. If the structure is not rehabiliated the metal pipe bottom will deteriorate and fail causing the roadway above to be load posted or closed.
2. That the alternative proposed by the applicant is the one with the least impact to wetlands or surface waters on site.
The alternatives considered are as follows: **Replace with a new structure in compliance with the NH Stream Crossing Guidelines: According to the Stream Crossing Guidelines, if a new structure were to be constructed at this location it would require a span of 36 feet. A structure of this size would cost approximately $2,500,000. Spending this much money on a structure that could be adequately preserved for approximately $200,000 would not be a practicable use of resources.** **Install Concrete Invert: This is the proposed alternative because it is the most cost effective way to repair a rusted metal pipe bridge. The project as proposed has an estimated cost of $200,000. This is the most cost-effective solution and also proposes the least amount of wetland impacts.** **In the June and April 2019 Natural Resource Agency Coordination Meeting no concerns with this project were raised.**

3. The type and classification of the wetlands involved.

R2UB1: Riverine, lower perennial, unconsolidated bottom, cobble gravel

Bank

4. The relationship of the proposed wetlands to be impacted relative to nearby wetlands and surface waters.

Mullikin Brook flows into Moore Reservoir

5. The rarity of the wetland, surface water, sand dunes, or tidal buffer zone area.

Mullikin Brook has not been identified as a rare surface water of the state. Moore Reservoir is approximately 500 feet downstream and is a waterbody proctected by the shoreland Water Quality Protection Act (SWQPA) as well as wihtin the quarter mile buffer of the designated Connecticut River.

6. The surface area of the wetlands that will be impacted.

5159 sq. ft. Riverine (3035 sq. ft. permanent, 2124 sq. ft. temporary)

2509 sq. ft. Bank (2509 sq. ft. temporary)

7. The impact on plants, fish and wildlife including, but not limited to:
   a. Rare, special concern species;
   b. State and federally listed threatened and endangered species;
   c. Species at the extremities of their ranges;
   d. Migratory fish and wildlife;
   e. Exemplary natural communities identified by the DRED-NHB; and
   f. Vernal pools.

a) The Natural Heritage Bureau (NHB) Datacheck tool returned with no record of species of special concern close to the project limits.

b) The US Fish and Wildlife Services (USFWS) IPaC tool identified the Northern Long-eared Bat (NLEB) and the Canada Lynx as "Threatened" species. Within the vicinity of the project area the proposed work will not remove any trees greater than 3" diameter at breast height and the pipe has been determined to not be suitable habitat for the bats. The location for the proposed worksite is outside of the designated critical habitat for the Lynx.

c) There are no species known to be at the extremeties of their ranges located in the project area.

d) Migratory fish and wildlife will not be affected by this project.

e) The Department has coordinated with DRED and the results of the NHB review revealed there was no record.

f) There were no vernal pools identified and/or delineated in the project area.

8. The impact of the proposed project on public commerce, navigation and recreation.

During construction all lanes of traffic will be maintained at all times. Mullikin Brook is a non-navigable water which makes it non-conducive to boaters. There are no recreational areas that have been identified in this area except for the possibility for fishing. During construction, fishing activities from the banks of the brook will need to occur outside of the construction work zone. When construction is completed the project as proposed will be a benefit to the public commerce.

9. The extent to which a project interferes with the aesthetic interests of the general public. For example, where an applicant proposes the construction of a retaining wall on the bank of a lake, the applicant shall be required to indicate the type of material to be used and the effect of the construction of the wall on the view of other users of the lake.

The project will not significantly interfere with the aesthetic interests of the general public. The proposed improvements will most likely go unnoticed as the work will primarily be performed within the existing structure and is down slope of the roadway and out of view to the general public.

10. The extent to which a project interferes with or obstructs public rights of passage or access. For example, where the applicant proposes to construct a dock in a narrow channel, the applicant shall be required to document the extent to which the dock would block or interfere with the passage through this area.

The project will not interfere with or obstruct public rights of passage or access. During construction, traffic will be maintained at all times.

11. The impact upon abutting owners pursuant to RSA 482-A:11, II. For example, if an applicant is proposing to rip-rap a stream, the applicant shall be required to document the effect of such work on upstream and downstream abutting properties.

The project is expected to have a positive impact on abutting properties. The rehabilitated structure will better serve the abutting properties if they need to travel on the road.

The project as proposed will not alter the chance of flooding on abutting properties.

12. The benefit of a project to the health, safety, and well being of the general public.

The project will provide a safer, longer lasting structure and roadway. If the structure is not rehabilitated, the bridge will eventually be load posted or closed. Keeping the roadway open benefits commerce, trade, emergency access, etc., for the general public.

18. The impact upon the value of the sites included in the latest published edition of the National Register of Natural Landmarks, or sites eligible for such publication.

The project is not located in or near Natural Landmarks listed on the national register.

19. The impact upon the value of areas named in acts of Congress or presidential proclamations as national rivers, national wilderness areas, national lakeshores, and such areas as may be established under federal, state, or municipal laws for similar and related purposes such as estuarine and marine sanctuaries.

The proposed project is not within any area named in an act of congress or presidential proclamations.

20. The degree to which a project redirects water from one watershed to another.

The project as proposed will not redirect water from one watershed to another.

Additional comments

New Hampshire Natural Heritage Bureau

To: Douglas Locker
7 Hazen Drive
Concord, NH 03302

Date: 4/2/2019

From: NH Natural Heritage Bureau

Re: Review by NH Natural Heritage Bureau of request dated 4/2/2019
NHB File ID: NHB19-1021 Applicant: Steve Johnson
Location: Tax Map(s)/Lot(s):
Littleton
Project Description: Install concrete invert within existing Metal Pipe Bridge.

The NH Natural Heritage database has been checked for records of rare species and exemplary natural communities near the area mapped below. The species considered include those listed as Threatened or Endangered by either the state of New Hampshire or the federal government. We currently have no recorded occurrences for sensitive species near this project area.

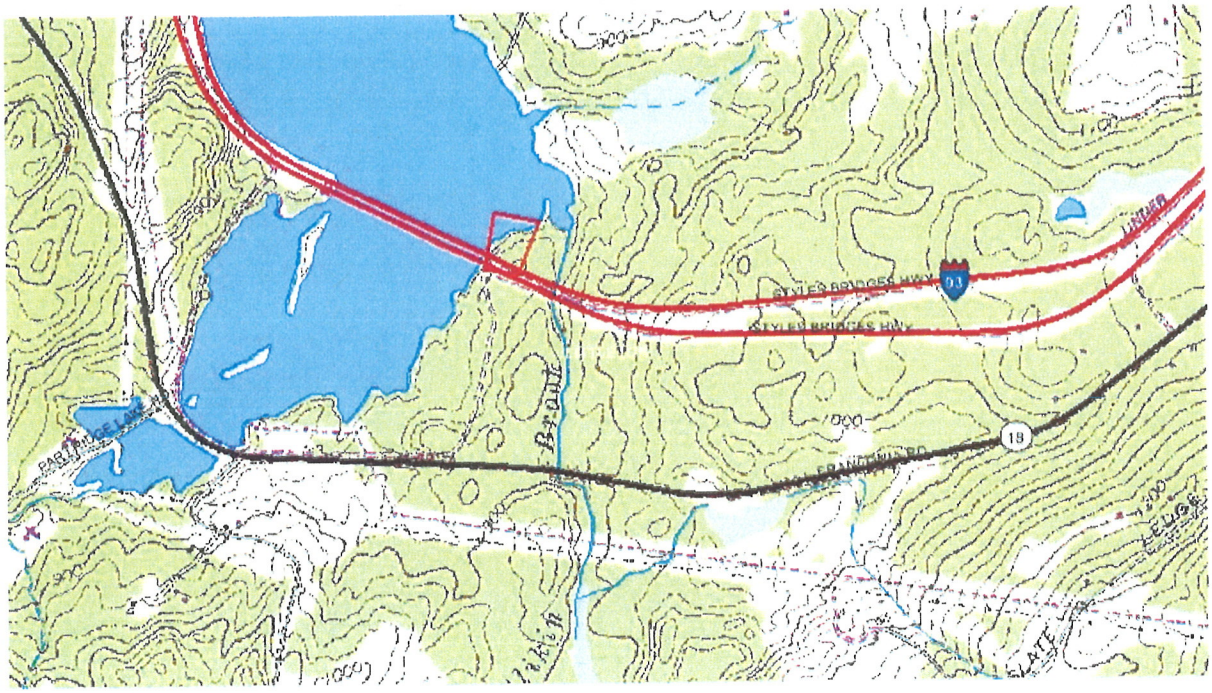
A negative result (no record in our database) does not mean that a sensitive species is not present. Our data can only tell you of known occurrences, based on information gathered by qualified biologists and reported to our office. However, many areas have never been surveyed, or have only been surveyed for certain species. An on-site survey would provide better information on what species and communities are indeed present.

This report is valid through 4/1/2020.

Department of Resources and Economic Development
Division of Forests and Lands
(603) 271-2214 fax: 271-6488

DRED/NHB
172 Pembroke Road
Concord NH 03301

MAP OF PROJECT BOUNDARIES FOR NHB FILE ID: NHB19-1021



Department of Resources and Economic Development
Division of Forests and Lands
(603) 271-2214 fax: 271-6488

DRED/NHB
172 Pembroke Road
Concord NH 03301

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104
http://www.fws.gov/newengland

June 21, 2019

In Reply Refer To:
Consultation Code: 05E1NE00-2019-SLI-2049
Event Code: 05E1NE00-2019-E-05166
Project Name: Littleton 133/094

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
(603) 223-2541

Project Summary

Consultation Code: 05E1NE00-2019-SLI-2049

Event Code: 05E1NE00-2019-E-05166

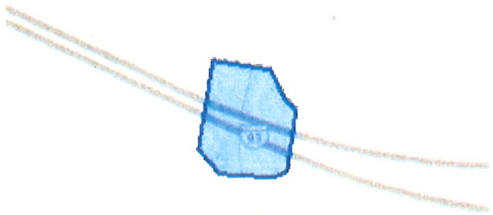
Project Name: Littleton 133/094

Project Type: BRIDGE CONSTRUCTION / MAINTENANCE

Project Description: Rehabilitation of bridge Littleton 133/094

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/44.31391522134085N71.85460424095898W



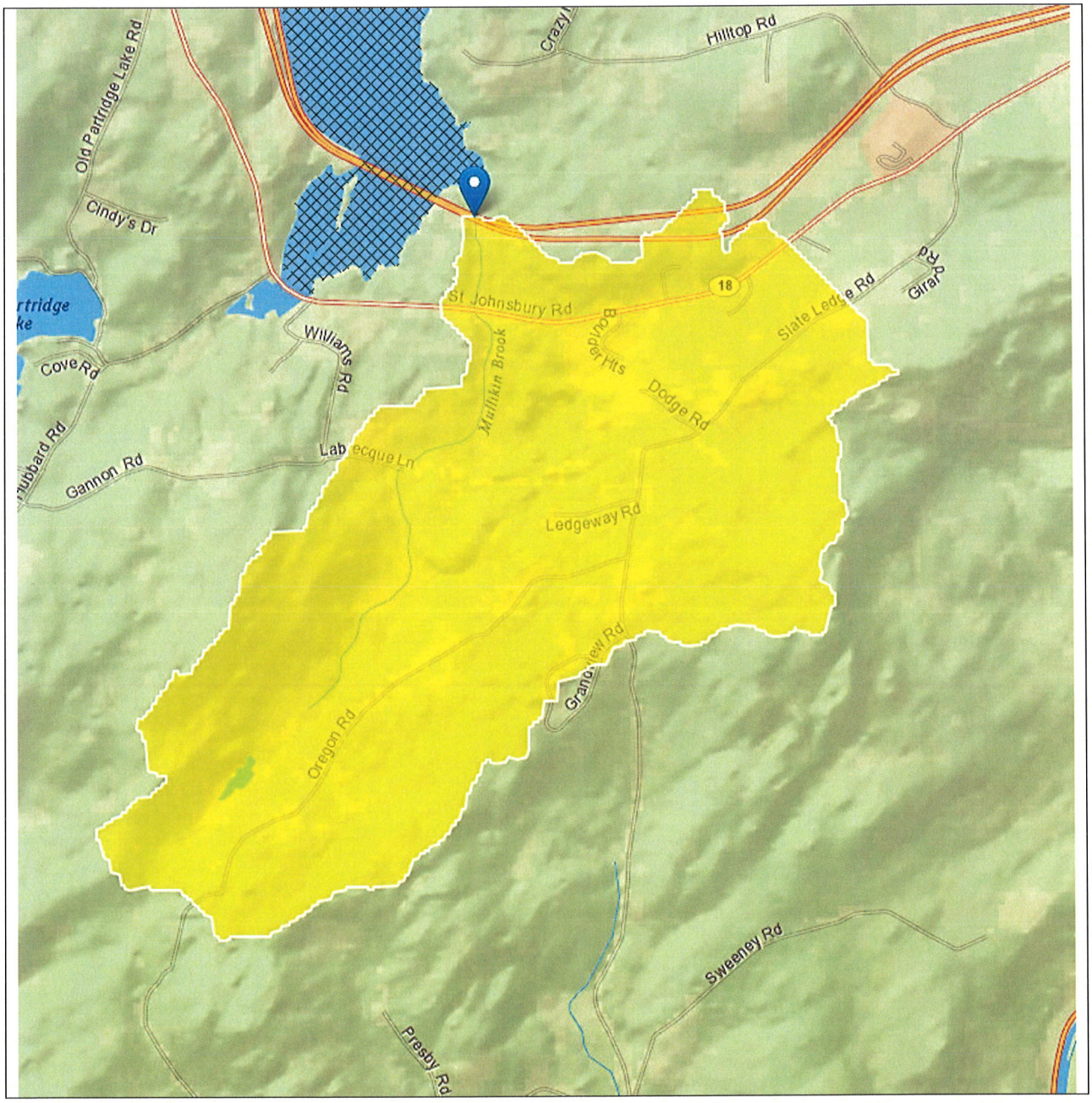
Counties: Grafton, NH

Hydraulic Data

Drainage Area – 3.1 square miles

Flow – Q 100 = 314 cfs

The proposed structure will pass the 100 year flood.



Watershed Boundaries Map

NH Department of Transportation
Bureau of Bridge Maintenance
Project, #42535
Env-Wt 904.09 Alternative Design
TECHNICAL REPORT

Env-Wt 904.09(a) - If the applicant believes that installing the structure specified in the applicable rule is not practicable, the applicant may propose an alternative design in accordance with this section.

Please explain why the structure specified in the applicable rule is not practicable (Env-Wt 101.69 defines practicable as *available and capable of being done after taking into consideration costs, existing technology, and logistics in light of overall project purposes.)*

Mullikin Brook has a drainage area of 3.2 square miles which qualifies this stream as a tier 3 crossing. The required span for a compliant crossing in accordance with the NH Stream Crossing Guidelines would be 36' which would cost approximately $2,500,000. Spending this much money on a structure that could be adequately preserved for approximately $200,000 would not be a practicable use of resources.

The proposed alternative meets the specific design criteria for Tier 2 and Tier 3 crossings to the *maximum extent practicable*, as specified below.

Env-Wt 904.05 Design Criteria for Tier 2 and Tier 3 Stream Crossings – New Tier 2 stream crossings, replacement Tier 2 crossings that do not meet the requirements of Env-Wt 904.07, and new and replacement Tier 3 crossings shall be designed and constructed:

(a) In accordance with the NH Stream Crossing Guidelines.

The proposed improvements have been developed in accordance with the NH Stream Crossing Guidelines. The Department has considered numerous design alternatives based on general considerations that take the geomorphic conditions of the stream into account as it relates to the structure. The Department has collected data in the field and in the office to aid in the design of the proposed crossing. Using information that was available the Department has determined that a full bridge replacement would not be practicable. As such, the Department has proposed an alternative design that meets the intent of the stream crossing guidelines to maximum extent practicable.

(b) With bed forms and streambed characteristics necessary to cause water depths and velocities within the crossing structure at a variety of flows to be comparable to those found in the natural channel upstream and downstream of the stream crossing.

The proposed project will not significantly change the existing waterway opening and structure alignment, and therefore, it will not change the depths or velocities at the crossing. The existing structure is a closed bottom metal pipe arch. The repaired structure will remain a closed bottom structure; however, the invert will be concrete rather than the existing deteriorated metal invert. The proposed alternative, although not an upgrade, does not diminish the existing conditions at the crossing.

(c) To provide a vegetated bank on both sides of the watercourse to allow for wildlife passage.

The existing structure does not have banks through the pipe, nor will it after the repair. The banks abutting both sides of Mullikin Brook are currently vegetated. Although there are temporary impacts in those areas the vegetation and existing conditions are not expected to be changed permanently. Wildlife can pass through the crossing; however, it will be in a wet/aquatic environment.

(d) To preserve the natural alignment and gradient of the stream channel, so as to accommodate natural flow regimes and the functioning of the natural floodplain.

The proposed project will not significantly change the existing waterway opening nor the structure alignment, and therefore the current alignment and gradient of the stream channel will not change as a result of this project.

(e) To accommodate the 100-year frequency flood, to ensure that (1) there is no increase in flood stages on abutting properties; and (2) flow and sediment transport characteristics will not be affected in a manner which could adversely affect channel stability.

Flow data taken from the New Hampshire StreamStats was input into Federal Highway Authority HY-8. Analysis was done on the existing structure will still adequately accommodate the 100-year flood. Abutting property owners will not see an increase in flooding since the rehabilitation will not compromise the channel's stability nor its ability to pass all types of flow. The proposed design will continue to accommodate sediment through the crossing.

(f) To simulate a natural stream channel.

The existing culvert has a metal invert. The repaired culvert will have a concrete invert. Simulating a natural stream channel is not feasible with this type of maintenance activity and type of pipe. The concrete invert is the only repair to extend the life of the pipe while providing the stabilization needed.

(g) So as not to alter sediment transport competence.

The proposed crossing will not impact the crossing's ability to transport sediment. Flow rates and transport competency will remain the same as the existing conditions.

Env-Wt 904.09(c)(3) – The alternative design must meet the general design criteria specified in Env-Wt 904.01:

Env-Wt 904.01
(a) Not be a barrier to sediment transport;

There will be no barriers to sediment transport as a result of the structure modification/repair. The crossing currently transports sediment and the proposed repairs will not alter the crossing's ability to continue this function. The crossing will maintain the existing opening and therefore is anticipated to continue to pass everything it is currently passing.

(b) Prevent the restriction of high flows and maintain existing low flows;

The proposed crossing will maintain the existing waterway opening. High flows and low flows will not be changed as a result of this project. The existing culvert is perched. To address this, a downstream fish weir will be installed in order to backwater through the pipe.

(c) Not obstruct or otherwise substantially disrupt the movement of aquatic life indigenous to the waterbody beyond the actual duration of construction;

Aquatic life indigenous to the water body will not be obstructed or otherwise disrupted as a result of this project. The stream will maintain its ability to successfully provide adequate aquatic organism and fish passage by installing a fish weir downstream to backwater though the pipe during low flow periods. During low flows small mammal species are expected to be able to utilize the crossing as a means of crossing the road as well.

(d) Not cause an increase in the frequency of flooding or overtopping of banks;

The existing crossing has no history of flooding or overtopping the banks of the stream. The proposed project will not increase the frequency of flooding or overtopping of banks. The project will maintain the existing waterway opening. This crossing will accommodate 100yr flood events.

(e) Preserve watercourse connectivity where it currently exists;

The existing culvert is perched and connectivity is currently interrupted.

(f) Restore watercourse connectivity where: (1) Connectivity previously was disrupted as a result of human activity(ies); and (2) Restoration of connectivity will benefit aquatic life upstream or downstream of the crossing, or both;

The existing culvert is perched. The invert lining is expected to raise the elevation of the watercourse through the pipe to an elevation that would perch the culvert at the outlet during low flow periods. To address the perch a downstream fish weir will be installed to backwater during low flows to maintain watercourse connectivity during low flow periods.

(g) Not cause erosion, aggradation, or scouring upstream or downstream of the crossing; and

The intent of the proposed project will not cause erosion, aggradation or scouring upstream or downstream of the crossing. Appropriate BMP's will be in place to ensure that the construction site is stable at all times.

(h) Not cause water quality degradation.

The proposed project will not cause water quality degradation.

***Note: An alternative design for Tier 1 stream crossings must meet the general design criteria (Env-Wt 904.01) only to the *maximum extent practicable*.**

US Army Corps of Engineers
New England District

U.S. Army Corps of Engineers
New Hampshire Programmatic General Permit (PGP)
Appendix B - Corps Secondary Impacts Checklist
(for inland wetland/waterway fill projects in New Hampshire)

1. Attach any explanations to this checklist. Lack of information could delay a Corps permit determination.
2. All references to "work" include all work associated with the project construction and operation. Work includes filling, clearing, flooding, draining, excavation, dozing, stumping, etc.
3. See PGP, GC 5 regarding single and complete projects.
4. Contact the Corps at (978) 318-8832 with any questions.

1. Impaired Waters	Yes	No
1.1 Will any work occur within 1 mile upstream in the watershed of an impaired water? See http://des.nh.gov/organization/divisions/water/wmb/section401/impaired_waters.htm to determine if there is an impaired water in the vicinity of your work area.*		X
2. Wetlands	Yes	No
2.1 Are there are streams, brooks, rivers, ponds, or lakes within 200 feet of any proposed work?	X	
2.2 Are there proposed impacts to SAS, shellfish beds, special wetlands and vernal pools (see PGP, GC 26 and Appendix A)? Applicants may obtain information from the NH Department of Resources and Economic Development Natural Heritage Bureau (NHB) website, www.nhnaturalheritage.org, specifically the book Natural Community Systems of New Hampshire.		X
2.3 If wetland crossings are proposed, are they adequately designed to maintain hydrology, sediment transport & wildlife passage?	X	
2.4 Would the project remove part or all of a riparian buffer? (Riparian buffers are lands adjacent to streams where vegetation is strongly influenced by the presence of water. They are often thin lines of vegetation containing native grasses, flowers, shrubs and/or trees that line the stream banks. They are also called vegetated buffer zones.)		X
2.5 The overall project site is more than 40 acres.		X
2.6 What is the size of the existing impervious surface area?	0 sq. ft.	
2.7 What is the size of the proposed impervious surface area?	0 sq. ft.	
2.8 What is the % of the impervious area (new and existing) to the overall project site?	0%	
3. Wildlife	Yes	No
3.1 Has the NHB determined that there are known occurrences of rare species, exemplary natural communities, Federal and State threatened and endangered species and habitat, in the vicinity of the proposed project? (All projects require a NHB determination.)		X
3.2 Would work occur in any area identified as either "Highest Ranked Habitat in N.H." or "Highest Ranked Habitat in Ecological Region"? (These areas are colored magenta and green, respectively, on NH Fish and Game's map, "2010 Highest Ranked Wildlife Habitat by Ecological Condition.") Map information can be found at: • PDF: www.wildlife.state.nh.us/Wildlife/Wildlife_Plan/highest_ranking_habitat.htm. • Data Mapper: www.granit.unh.edu. • GIS: www.granit.unh.edu/data/downloadfreedata/category/databycategory.html.	X	
3.3 Would the project impact more than 20 acres of an undeveloped land block (upland, wetland/waterway) on the entire project site and/or on an adjoining property(s)?		X
3.4 Does the project propose more than a 10-lot residential subdivision, or a commercial or industrial development?		X
3.5 Are stream crossings designed in accordance with the PGP, GC 21?	X	

4. Flooding/Floodplain Values	Yes	No
4.1 Is the proposed project within the 100-year floodplain of an adjacent river or stream?	X	
4.2 If 4.1 is yes, will compensatory flood storage be provided if the project results in a loss of flood storage?		X
5. Historic/Archaeological Resources		
If a minor or major impact project, has a copy of the Request for Project Review (RPR) Form (www.nh.gov/nhdhr/review) been sent to the NH Division of Historical Resources as required on Page 5 of the PGP?**	X	

*Although this checklist utilizes state information, its submittal to the Corps is a Federal requirement.

** If project is not within Federal jurisdiction, coordination with NH DHR is not required under Federal law.

Downstream Outlet

Downstream Channel

Downstream Looking at the Structure

4. Flooding/Floodplain Values	Yes	No
4.1 Is the proposed project within the 100-year floodplain of an adjacent river or stream?	X	
4.2 If 4.1 is yes, will compensatory flood storage be provided if the project results in a loss of flood storage?		X
5. Historic/Archaeological Resources		
If a minor or major impact project, has a copy of the Request for Project Review (RPR) Form (www.nh.gov/nhdhr/review) been sent to the NH Division of Historical Resources as required on Page 5 of the PGP?**	X	

*Although this checklist utilizes state information, its submittal to the Corps is a Federal requirement.

** If project is not within Federal jurisdiction, coordination with NH DHR is not required under Federal law.

Upstream Inlet

Upstream Inlet

Downstream Outlet

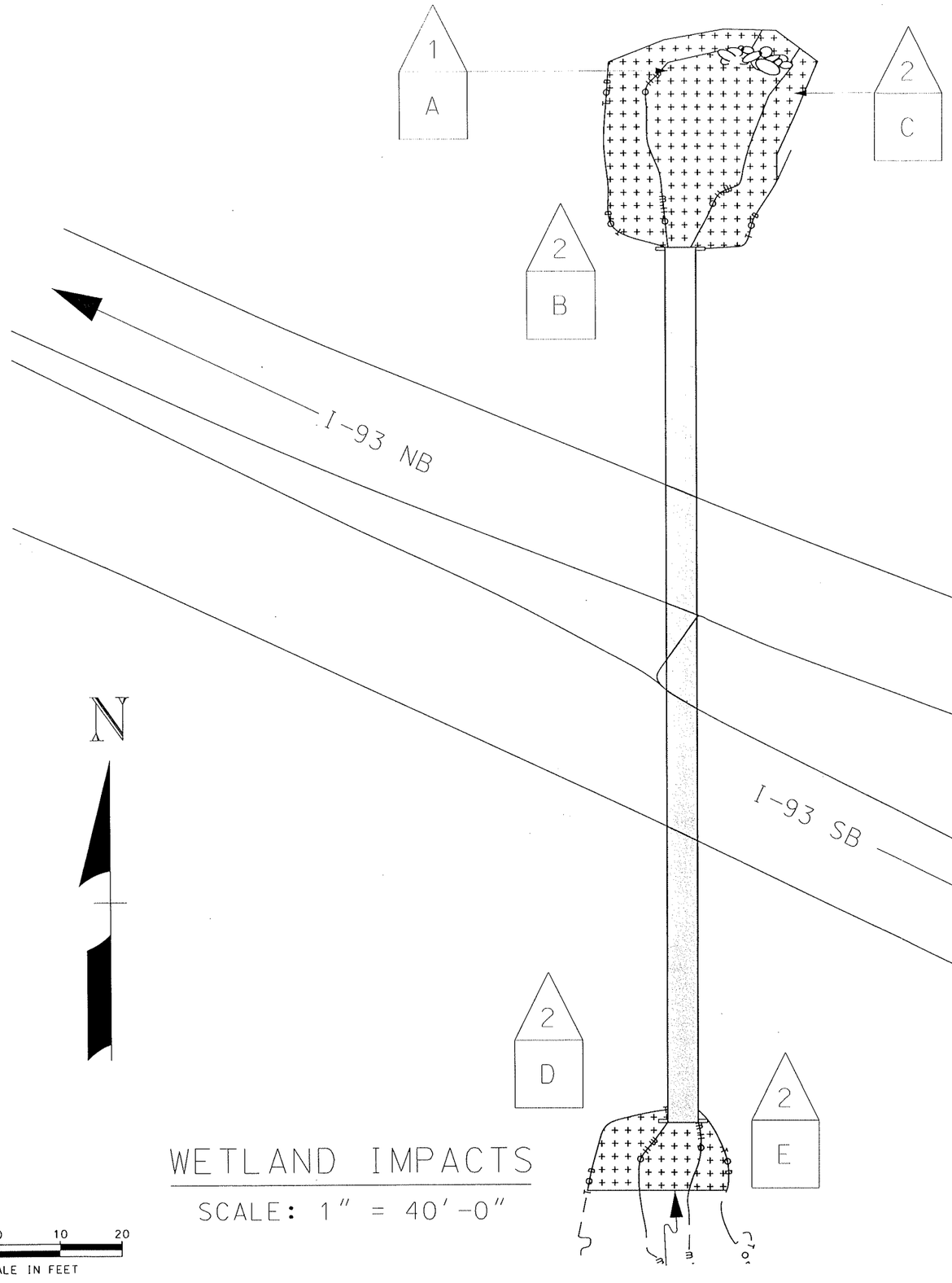
Downstream Channel

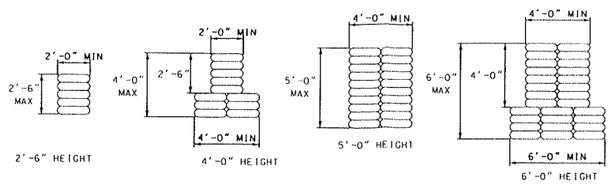
Downstream Looking at the Structure

CONSTRUCTION SEQUENCE

1. At normal to low flow, a diversion pipe will be placed at the streambed elevation.
2. The work zone will be dewatered or contained.
3. The concrete invert within the pipe will be placed.
4. All dewatering devices will be removed and the site will be restored to its original quality.

Note: The Project will utilize BMP's from the Best Management Practices manual during all phases of construction.





COFFERDAM DETAILS

NOT TO SCALE

RRIPRAP	
NEW HAMPSHIRE WETLANDS BUREAU (PERMANENT NON-WETLAND)	
NEW HAMPSHIRE WETLANDS BUREAU & ARMY CORP OF ENGINEERS (PERMANENT WETLAND)	
TEMPORARY IMPACTS	

WETLAND IMPACTS

SCALE: 1" = 40'-0"

10 0 10 20

SCALE IN FEET

WETLANDS DELINEATED BY MATT URBAN AND ON 10/26/2016

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE MAINTENANCE

TOWN LITTLETON BRIDGE NO. 133/094 STATE PROJECT 41224

LOCATION I-93 OVER MULLIKIN BROOK

WETLAND IMPACTS

BRIDGE SHEET 1 OF 3

REVISIONS AFTER PROPOSAL	BY	DATE

	BY	DATE		BY	DATE
DESIGNED			CHECKED		
DRAWN	DBL	6/21/19	CHECKED		
QUANTITIES			CHECKED		

FILE NUMBER LITTLETON 133/094

SHEET SCALE AS NOTED

ISSUE DATE

REV. DATE

FISCAL YEAR	CREW	SHEET NO.	TOTAL SHEETS
2017	10	1	3

Littleton 133/094

WETLAND IMPACT SUMMARY

WETLAND NUMBER	WETLAND CLASSIFICATION	LOCATION	AREA IMPACTS						LINEAR STREAM IMPACTS FOR MITIGATION		
			PERMANENT				TEMPORARY		PERMANENT		
			N.H.W.B. (NON WETLAND)		N.H.W.B. & A.C.O.E. (WETLAND)				BANK LEFT	BANK RIGHT	CHANNEL
			SF	LF	SF	LF	SF	LF	LF	LF	LF
1	R2UB1	A			3035	292	2124	98			
2	BANK	B					1166	100			
2	BANK	C					747	76			
2	BANK	D					410	44			
2	BANK	E					186	23			
		TOTAL	0	0	3035	292	4633	341	0	0	0

PERMANENT IMPACTS: 3035 SF
TEMPORARY IMPACTS: 4633 SF

TOTAL IMPACTS: 7668 SF

SUBTOTALS		PERMANENT				TEMPORARY	
		N.H.W.B. (NON WETLAND)		N.H.W.B. & A.C.O.E. (WETLAND)			
CLASS	DESCRIPTION	SF	LF	SF	LF	SF	LF
R2UB1	RIVERINE	0	0	3035	292	2124	98
BANK	BANK	0	0	0	0	2509	243

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE MAINTENANCE

TOWN LITTLETON BRIDGE NO. 133/094 STATE PROJECT 41224

LOCATION I-93 OVER MULLIKIN BROOK

WETLAND KEY AND SUMMARY

BRIDGE SHEET 1 OF 3

REVISIONS AFTER PROPOSAL | BY | DATE

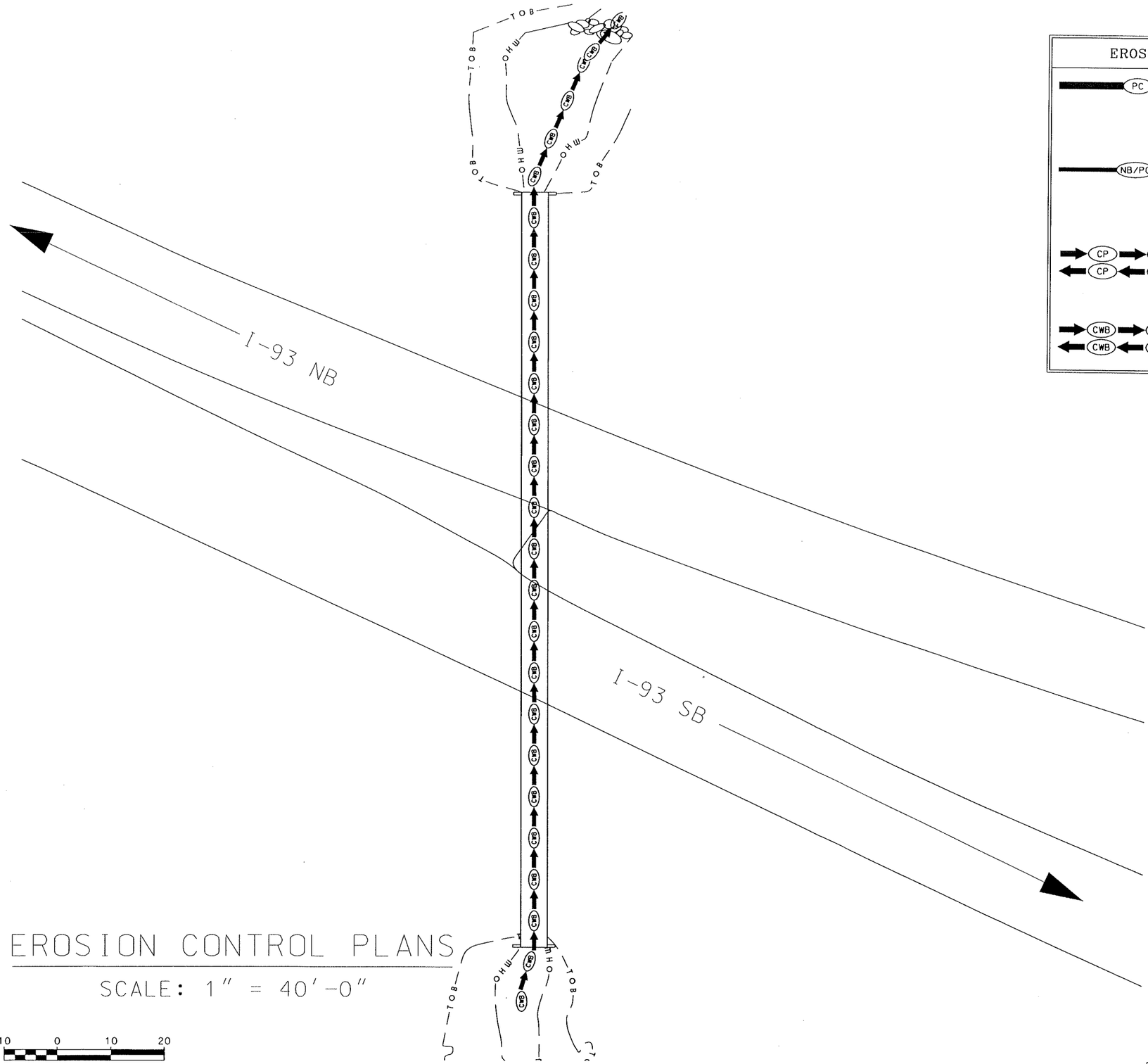
DESIGNED | BY | DATE | CHECKED
DRAWN DBL 6/21/19 | CHECKED
QUANTITIES | CHECKED

FILE NUMBER LITTLETON 133/094

SHEET SCALE AS NOTED

ISSUE DATE | FISCAL YEAR 2017 | CREW 10 | SHEET NO. 1 | TOTAL SHEETS 3

REV. DATE



EROSION CONTROL PLAN LEGEND

- PC — PERIMETER CONTROL
  - SILT FENCE
  - EROSION CONTROL MIX BERM
  - EROSION CONTROL MIX SOX
  - TURBIDITY CURTAIN
  - SHEET PILE
  - COFFER DAM
- NB/PC — NATURAL BUFFER/PERIMETER CONTROL
  - SILT FENCE
  - EROSION CONTROL MIX BERM
  - EROSION CONTROL MIX SOX
  - TURBIDITY CURTAIN
  - SHEET PILE
  - COFFER DAM
- CP — CHANNEL PROTECTION
  - STONE CHECK DAMS
  - STRAW WATTLES
  - CHANNEL MATTING
  - CLASS D EROSION STONE
  - CLASS C STONE
- CWB — CLEAN WATER BYPASS
  - PUMP THROUGH PIPE
  - DRAIN THROUGH PIPE OR CHANNEL

EROSION CONTROL PLANS

SCALE: 1" = 40'-0"

10 0 10 20
SCALE IN FEET

SHEET SCALE
AS NOTED

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE MAINTENANCE

TOWN LITTLETON BRIDGE NO. 133/094 STATE PROJECT 41224
LOCATION I-93 OVER MULLIKIN BROOK

EROSION CONTROL PLANS

REVISIONS AFTER PROPOSAL	BY	DATE

	BY	DATE		BY	DATE
DESIGNED			CHECKED		
DRAWN	DBL	6/21/19	CHECKED		
QUANTITIES			CHECKED		

ISSUE DATE	FISCAL YEAR	CREW	SHEET NO.	TOTAL SHEETS
REV. DATE	2017	10	1	3

BRIDGE SHEET 1 OF 3
FILE NUMBER LITTLETON 133/094